

**Amendments to the Claims:**

1. (currently amended) Method for functionalizing polysaccharides using a physical or chemical source of free radicals, which forms stable radicals on a polysaccharide structure wherein at least one of the formed radicals reacts with a functionalized olefin, comprising:

    a first step, wherein a free radical on a polysaccharide chain is formed, and  
    a second step, wherein said radical reacts with an olefin in the absence of a radical source; ~~and~~ wherein

        the polysaccharide is in the form of a fiber ~~and wherein~~ ;

        the amount of functional groups introduced in the polysaccharide is between  $10^{-3}$  and 2 mol olefin/eq anhydrous glucose; and

the physical source is electron beam radiation, and the chemical source is Fenton's reagent.

2 - 3. (canceled)

4. (previously presented) Method according to claim 1, wherein the polysaccharide is selected from the group consisting of flax fibers, cellulose, viscose and cotton fibers.

5. (previously presented) Method according to claim 4, wherein the polysaccharide is used together with one or more natural or synthetic fibers.

6. (previously presented) Method according to claim 5, wherein the natural or synthetic fibers are selected from silk, polyamide, polyester, polyacrylate and polyolefin.

7. (previously presented) Method according to claim 1, wherein, in the first step, the free radical is generated by electron beam having a radiation dose between 10 and 400 kGy.
8. (previously presented) Method according to claim 7, wherein the radiation dose is between 20 and 200 kGy.
9. (canceled)
10. (previously presented) Method according to claim 1, wherein the stable radicals have a half-life of about 1 day.
11. (previously presented) Polysaccharides obtainable by the method of claim 1.
12. (previously presented) Polysaccharides according to claim 11, wherein the ratio mol olefin/eq anhydrous glucose is between  $10^{-2}$  and 1.
13. (currently amended) Process for the preparation of functionalized polysaccharides or polymer fibers comprising:
- a) forming stable radicals on a polysaccharide from a physical or chemical free radical source wherein the physical source is electron beam radiation, and the chemical source is Fenton's reagent; and
  - b) reacting, in the absence of the free radical source, an olefin containing a functional group with the stable radicals on the polysaccharide.
14. (canceled)

15. (new) Method according to claim 1, wherein the amount of functional groups introduced in the polysaccharide is between  $10^{-2}$  and 1 mol olefin/eq anhydrous glucose.